



**Date:** August 2, 2011

**To:** Thomas J. Bonfield, City Manager  
**Through:** Theodore L. Voorhees, Deputy City Manager  
**From:** Marvin G. Williams, Public Works Director  
Edward Venable, Engineering and Stormwater Manager  
Paul Wiebke, Assistant Stormwater Manager  
Dana P. Hornkohl, Civil Engineer, Stormwater Services Division  
**Subject:** Amendment No. 1 – Contract for Professional Services for Floodplain Analysis and FEMA Permitting for Obie Drive

### **Executive Summary**

The City Manager awarded an on-call supplemental agreement to PB Americas, Inc. on February 28, 2008 in the amount of \$95,541.96 to provide assistance to the City of Durham with analysis, evaluation, and recommendations for the existing storm drainage system in the vicinity of the crossing of Southwest Creek and Obie Drive. Additional funds are needed to complete the floodplain analysis and permitting documents for this project. Approving the additional funding at this time will allow for the design and permitting of modifications to Obie Drive to produce a “no rise” condition and correct errors discovered in the floodplain modeling for Southwest Creek. The Public Works Department recommends amending the existing contract with PB Americas, Inc. in the amount \$53,345.59. The resulting contract amount would be \$148,887.55.

### **Recommendation**

The Administration recommends that the City Council authorize the City Manager to execute Amendment No. 1 – Contract for Professional Services for Floodplain Analysis and FEMA Permitting for Obie Drive in the amount of \$53,345.59.

### **Background**

Mr. Eric Fields and Ms. Barbara Fields of 303 Obie Drive contacted the Engineering Division in the fall of 2007 concerning the street improvement project that was under construction along Obie Drive. The Fields were concerned that the street improvement project was routing additional stormwater runoff towards their property.

The Fields’ property at 303 Obie Drive is located in a Special Flood Hazard Area (SFHA) as shown on the current Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) no. 3720072900K (map revised August 2, 2007). The current map indicates that the base flood elevation (BFE) on the Fields’ property ranges between 331.0 and 332.0. The finished floor elevation of the Fields’ home is approximately 331.12. The home is primarily located within the FEMA regulated floodway fringe. However, a portion of the home is located within the FEMA regulated floodway. The Fields experience routine flooding on their property because of its location within the floodplain.

The Stormwater Services Division recommended a flood study of the storm drainage system in the vicinity of the crossing of Southwest Creek and Obie Drive in order to address the Fields' concerns and determine if the street improvement project could be modified to improve the routine flooding situation at 303 Obie Drive. The City Manager awarded an on-call supplemental agreement to PB Americas, Inc. on February 28, 2008 in the amount of \$95,541.96. The consultant was responsible for providing assistance to the City of Durham with analysis, evaluation, and recommendations for the storm drainage system in this area. It was determined that the 1% annual chance flood (100-year storm) would be analyzed in order to evaluate the storm drainage system. Construction of the Obie Drive street improvements was completed in October of 2009.

The consultant determined there were errors in FEMA's Current Effective model of Southwest Creek while updating the model as part of their work. As a result of these errors, the base flood elevations shown on the effective FIRM for this area are incorrect. The City asked the consultant to revise and correct the model as part of their work. This required additional time to gather the necessary survey information and update the model. The consultant also needed additional time to coordinate with the North Carolina State Floodplain Mapping Program to determine an acceptable ground elevation data source for mapping the revised floodplain with the corrected base flood elevations.

The updated modeling determined that the street improvements along Obie Drive resulted in an increase in the base flood elevation of 0.04-feet (approximately ½-inch) on the Fields' property.

<u>Model</u>	<u>Condition</u>	<u>Base Flood Elevation</u>
Corrected Effective	Before Street Improvements	333.54
Post Project	After Street Improvement	333.58

FEMA does not allow development to increase the base flood elevation on structures located within the floodplain. In order to address the 0.04-foot increase it was determined that construction modifications could be made to Obie Drive and the storm drainage system in the area to return the base flood elevation to those determined in the Corrected Effective model. This would result in what is commonly known as a "no rise" condition.

Amendment No. 1 will include two tasks to be performed by the consultant that will result in a "no rise" condition. Task 100D will be producing a "no rise" certification and task 100E will be a Letter of Map Revision (LOMR) to document the "no rise" condition and correct the effective FIRM. The tasks are detailed in the attached scope of services for Amendment No. 1. The amendment in the amount of \$53,345.59 will result in a total contract amount of \$148,887.55.

### **Issues and Analysis**

An additional \$53,345.59 is requested to complete the design and permitting of construction modifications to the Obie Drive street improvements that will result in a "no rise" condition. The additional funds will allow the design of the construction modifications to proceed.

### **Alternatives**

City Council may choose to not approve the request. Staff would complete a portion of the design in-house and contract for the required professional services for the remaining tasks. This will result in a significant time delay in the design, permitting, and construction of the modifications needed to establish a "no rise" condition.

**Financial Impact**

This contract amendment is budgeted for in the adopted Capital Improvements Project Ordinance (#13288) for drainage repairs, account 4300L045-725000-LK107.

**SDBE Summary**

This is an on-call contract amendment. A compliance review was not conducted by the Department of Equal Opportunity/Equity Assurance to determine compliance with the Ordinance to Promote Equal Opportunities in City Contracting.

**Attachments**

Map of 303 Obie Drive and the Surrounding Area  
Flood Insurance Rate Map No. 3720072900K (Map Revised August 2, 2007)  
Contract Amendment No. 1 – Scope of Services  
Executed On-Call Supplemental Agreement  
Executed On-Call Master Agreement